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Poster presentation

A case-control study to identify risk factors for *Streptococcus suis* meningitis and septicemia in adults in Southern Vietnam

Ho Dang Trung Nghia*, Constance Schultsz, To Song Diep, Nguyen Van Vinh Chau, Jeremy Farrar and Tran Tinh Hien

Address: Oxford University Clinical Research Unit, Hospital for Tropical Diseases, Ho Chi Minh City, Vietnam

Email: Ho Dang Trung Nghia* - nghiahdt@oucru.org

* Corresponding author

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Introduction

Streptococcus suis (*S. suis*) is a Gram-positive coccus. The natural habitats of *S. suis* are the upper respiratory-, genital-, and gastrointestinal tracts of pigs. Most authors agree that the organisms probably gained entry into humans via small wounds and the people at greatest risk are those in close contact with ill pigs, healthy carrier pigs or pork (infected with *S. suis*) such as pig breeders, abattoir workers, meat-processing, butchers, hunters and veterinarians. However, many of our patients did not report pig or pork contact and did not have any obvious wounds on their hands and feet. We conduct this study to identify the risk factors for *S. suis* infection in Vietnam.

Methods

This study is designed as a case-control study with a case-control ratio of 1:3, including one group of cases and two groups of controls. The sample size is 100 cases of *S. suis* infection. The study will be conducted at the HTD (recruitment of cases and one control group), as well as in the community where recruitment of the second control group will take place. The site of recruitment of the latter controls will vary according to the residency of the cases.

Cases

All adult patients admitted to the HTD with culture (blood or cerebrospinal fluid [CSF]), or PCR (CSF) confirmed *S. suis* serotype 2 meningitis or sepsis.

Controls

Hospital-based controls: adult patients admitted to ward MRU of the HTD with a confirmed bacterial (not *S. suis*) or viral meningitis/encephalitis or malaria.

Community-based controls: randomly selected from community members/neighbours, matched for age.

Risk factors are assessed using a standardized questionnaire that consists of four parts: socio-demographic and cultural characteristics, medical history, potential exposure to pigs/pork and food habits and general hygiene measures.

Results

We intend to perform this study in 3 years (May 2006–April 2009). After two years (from May 2006 to April 2008), we had 63 cases, 189 hospital controls and 186 community controls. Table 1 shows some etiologies of the cases and hospital controls.

Table 1:

Etiology	Frequency
Streptococcus suis serotype 2	59
Streptococcus suis serotype 14	03
Streptococcus suis unknown serotype	01
Streptococcus pneumoniae	22
Neisseria meningitidis	05
Other bacteria (S. aureus, S. agalactiae...)	03
Cryptococcus neoformans	10
Eosinophilic meningitis	23
Severe malaria	74
Viral meningitis/encephalitis	47
Other diagnosis	05

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